

ruary 22; 1890, January 18, February 10, March 25, 31, April 29; 1891, February 2, 3, 5, 27, May 21, 22; 1892, February 7.

*Meteors* were seen: 1875, March 24; 1887, September 15; 1888, January 4, December 28; 1889, November 17; 1890, August 11, 12; 1891, January 8.

The zodiacal light was observed in the evening on the following dates: 1877, March 21; 1878, January 29, 30; 1879, January 10, 14, 23; 1880, January 11; 1882, March 7, 8; 1883, January 29, February 7, 8, 26, March 8; 1886, February 22, 23; 1887, February 14, 21; 1888, February 2, 3, 29, December 23; 1889, December 16; 1890, January 17, 18, 21, 29, February 9, 10, 11, 13, 15, 16; March 9; 1891, January 8, 10, February 2, 10, 27, March 6, 7. Observations were made practically every evening, but of course certain of the phenomena may have been missed.

TABLE 14.—*Lunar halos at Orono, Me.*

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1869				1								
1870			1									
1871					1							
1872		1										
1873					1							
1874	1				1							
1875					1				1			
1876			2									
1877	1		1									
1878		2								1		
1879	1								1	1		
1880		2	1					1				
1881	2									1		
1882		1										
1883						1						
1884	2				1					1	2	
1885			1	2							1	
1886		1		1		1				1	1	
1887	1	1	1	1						1	2	
1888		1	1	1						1	1	
1889	1	3	2	1						1	3	
1890	4	1	2					1		2		
1891	1			1	1	2				1	1	
1892	2	2	2		1					1		1
1893	1	7		3					1			
1894				2								
1895												
Sum...	15	22	17	14	5	4	0	2	4	10	3	10

TABLE 15.—*Auroras at Orono, Me.*

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1869			4	5	2				3	4	1	
1870	3	3	4	1	1	1	2	1	2	1	2	2
1871		5	3	2	2	2	2	1	5	2	3	2
1872	1	2	2		2		1	4		3	3	2
1873	2	2	1	3	1	3	2		1	2		
1874	2	1		2			1			5		1
1875		1		2					1			
1876				1					1			
1877	1											
1878		1							1		2	
1879				1					1	1		
1880		3	2					4		1	3	
1881	1			2				1		4	3	3
1882	2	2	1					1		3		
1883	5	3	1			1		1		1		
1884	3	4							1	1		3
1885		2	2		1	1		3	1	1	1	3
1886		2	1	3		1		2	3	3	1	
1887	2	1	1	3		1		2	1	1	2	
1888	1	1	1	3	1	1	1	1	1	3	1	
1889	3	2		1		1	1	1		1	4	2
1890	3	2				3	2	3	2	5		
1891	1	1	3	1	3	1	4	1	3	2	3	1
1892	1	8	6	6	1	4	1	3	5	1	3	3
1893		5	2		1	5	2	3	1		5	
1894					3	1				2		
1895												
1896												
1897	1	5	3									
1898												
1899												
1900												
1901												
1902												
Sum...	16	40	45	46	22	12	18	23	37	48	44	23

Earthquakes occurred: 1870, October 20; 1871, October 19; 1872, January 9; 1881, June 21.

#### RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. F. TALMAN, Acting Librarian.

The following titles have been selected from among the books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be loaned for a limited time to officials and employees who make application for them.

**Austria-Hungary.** Hydrographisches Amt der Kaiserlichen und Königlichen Kriegsmarine in Pola.

Jahrbuch der meteorologischen, erdmagnetischen und seismischen Beobachtungen. Neue Folge. IX. Band. xxxiii, 190 pp. f°. Pola. 1905.

**Austria-Hungary.** Kaiserliche Königliche Central-Anstalt für Meteorologie und Erdmagnetismus.

Jahrbücher der K. K. Central-Anstalt für Meteorologie und Erdmagnetismus. Jahrgang 1903. Neue Folge. XL. Band. v. p. f°. Wien. 1905.

Same. Anhang. 89 pp. f°. Wien. 1905.

**Baden.** Centralbureau für Meteorologie und Hydrographie. Jahres-Bericht des Centralbureaus für Meteorologie und Hydrographie im Grossherzogtum Baden mit den Ergebnissen der meteorologischen Beobachtungen und der Wasserstandsauzeichnungen am Rhein und an seinen grösseren Nebenflüssen für das Jahr 1904. 97 pp. 6 plates. f°. Karlsruhe. 1905.

**Carnegie Institution of Washington.**

Desert Botanical Laboratory of the Carnegie Institution. By Frederick Vernon Coville and Daniel Trembley MacDougal. 58 pp. 8°. Washington. 1903.

Report of Committee on Southern and Solar Observatories. 170 pp. 8°. Washington. 1903.

**Eiffel, G.**

Etudes pratiques de météorologie et observations comparées des stations de Beaulieu, Sèvres et Vacquey pour l'année 1903. xxx, 377 pp. f°. Paris. 1905.

Same. Atlas des planches. 24 plates.

Les observations courantes en météorologie et comparaison des stations de Beaulieu, Sèvres et Vacquey. Conférence faite à la Société Astronomique de France le 4 janvier 1905. (Extrait du Bulletin de la Société Astronomique de France.) 43 pp. 8°. Paris. 1905.

**Gesellschaft für Erdkunde zu Berlin.**

Bibliotheca geographica. Herausgegeben von der Gesellschaft für Erdkunde zu Berlin. Bearbeitet von Otto Baschin. Band X. Jahrgang 1901. xvi, 571 pp. 8°. Berlin. 1904.

**Isthmian Canal Commission.**

Report of the Isthmian Canal Commission, 1899-1901. 688 pp. 86 plates. 4°. Washington. 1904.

**Kassner, [Carl Julius Hermann].**

Die normale Verteilung der Niederschläge in Deutschland und die Dürre im Jahre 1904. (Deutsche Landwirtschafts Gesellschaft. Sonderabdruck aus "Jahrbuch" 1905.) Pp. 89-105. 8°.

**Mill, Hugh Robert.**

British rainfall, 1904. Forty-fourth annual volume 87, [279] pp. 8°. London. 1905.

**Naturforschender Verein in Brünn.**

Verhandlungen. XLII. Band. 1903. 253 pp. 8°. Brünn. 1904.

Bericht der Meteorologischen Commission des Naturforschenden Vereines in Brünn. 1890, 1891, 1893-1900, 1902. 8°. Brünn. 1892, 1893, 1895-1902, 1904.

Beitrag zur Kenntnis der Niederschlagsverhältnisse Mährens und Schlesiens. 13 pp. 8°. 1 chart. Brünn. 1904.

**Nimführ, R[aimund].**

Sehr tiefe Temperaturen in grossen Höhen der Atmosphäre. (From Meteorologische Zeitschrift. Juli 1905.) Pp. 289-299. 4°.

**Norway.** Norske Meteorologiske Institut.

Oversigt over Luftens Temperatur og Nedboren i Norge i Aaret 1903. 21 pp. 8°. n. t. p.

Same. 1904. 21 pp. 8°. n. t. p.

Jahrbuch des Norwegischen Meteorologischen Instituts für 1904. Herausgegeben von Dr. H. Mohn. 138 pp. f°. Christiania. 1905.

**Observatorio del Colegio Pio de Villa Colon.**

El año meteorológico 1901-1902 por el P. Juan de Dios Moratorio. (Escrito expresamente para el "Anuario estadístico".) 12 pp. 4°. Montevideo. 1904.

**Osservatorio di Messina.** Istituto di Fisica Terrestre e Mete-

orologia della R. Università.

Annuario per l'anno 1904. 87 pp. 8°. Messina. 1905.

**Freibisch, Ernst.**

Wetterlehre. iv, 95 pp. 8°. Bautzen. 1905.

**Rizzo, G[iovanni] B[attista].**

Sopra il calcolo della costante solare. (Accademia Reale della Scienze di Torino, Anno 1902-1903). 19 pp. 8°. Torino. 1903.

Valori assoluti e variazioni secolari degli elementi del magnetismo terrestre a Torino. (Accademia Reale delle Scienze di Torino, Anno 1896-97). 14 pp. 8°. Torino. 1897.

Contributo allo studio della dispersione elettrica nell'atmosfera. (Accademia Reale delle Scienze di Torino, Anno 1902-1903.) 7 pp. 8°. Torino. 1903.

**Sutton, J. R.**

Results of some further observations upon the rate of evaporation. (Reprinted from the Report of the South African Association for the Advancement of Science, Johannesburg meeting, 1904.) Pp. 121-141. 8°.

**Webber, B. C.**

The gales from the Great Lakes to the maritime provinces. (Department of Marine and Fisheries, Meteorological Service of Canada.) 63 pp. 8°. Ottawa. 1905.

**Zölls, Bonifaz.**

Beiträge zur Kenntnis der atmosphärischen Elektrizität XVIII. Elektrizitätszerstreuung in Kremsmünster (1903 bis 1904) bearbeitet von —. (Aus den Sitzungsberichten der kaiserl. Akademie der Wissenschaften in Wien. Mathem.-naturw. Klasse; Bd. CXIV. Abt. II a. Jänner, 1905.) 143 pp. 6 tables. 8°. Wien. 1905.

Elektrizitätszerstreuung in Kremsmünster (1903-1904). (Sonderabdruck aus der Physikalischen Zeitschrift. 6 Jahrgang. No. 5.) 4 pp. 4°.

**RECENT PAPERS BEARING ON METEOROLOGY.**

C. F. TALMAN, Acting Librarian.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a —

**Aeronautical Journal. London. Vol. 9.**

— Aeronautics and meteorology. Pp. 4-41.

**Vives y Vich, Pedro.** The Spanish provisional programme of balloon observations in the coming total eclipse. Pp. 47-49.

— A scientific balloon ascent from Berlin. Pp. 49-51.

— The first observations with "ballons-sonde" in America. P. 51.

**Geographical Journal. London. Vol. 26.**

**Murray, John and Pullar, Laurence.** Bathymetrical survey of the fresh-water lochs of Scotland. Pp. 42-69.

— Autumn rainfall and yield of wheat in England. [Note.] Pp. 83-84.

**Johnson, Harry.** Liberia. [Climate.] Pp. 131-153.

**Journal of the Meteorological Society of Japan. Tokyo. June, 1905.**

**Okada, T.** Notes on the climate of the Bonin Islands. Pp. 19-23.

**National Geographic Magazine. Washington. Vol. 16.**

— Deforestation and climate. [Abstract of paper by Hennig.] Pp. 397-398.

**Nature. London. Vol. 72.**

**Rotch, A. Lawrence.** The exploration of the atmosphere above the Atlantic. Pp. 244.

— Solar and terrestrial changes. Pp. 249-251.

**Burton, C. V.** The hydrometer as a seismometer. P. 269.

**Rotch, A. Lawrence.** Eclipse shadow bands. Pp. 307-308.

— Solar and terrestrial changes. [Abstract of proceedings of meeting of the International Commission, Cambridge, 1904.] Pp. 332-333.

**Philosophical Transactions of the Royal Society of London. London. Series A, Vol. 205.**

**Simpson, George C.** Atmospheric electricity in high latitudes. Pp. 61-97.

**Proceedings of the Royal Society of London. London. Series A. Vol. 76.**

**McLeod, C.** Records of difference of temperature between McGill College Observatory and the top of Mount Royal, Montreal. Pp. 415-418.

**Science. New York. New Series. Vol. 22.**

**Tamura, S. Tetsu.** Mt. Tsukuba Meteorological Observatory founded by H. I. H. Prince Yamashina. Pp. 122-124.

**Ward, R. DeC.** Cyclonic and anticyclonic temperatures. [Note on article by H. Helm Clayton.] Pp. 186-187.

**Ward, R. DeC.** Meteorology at Colorado College, Colorado Springs. [Note.] P. 187.

**Ward, R. DeC.** Neolithic dew-ponds. [Note on work by A. J. and G. Hubbard.] Pp. 187-188.

**Scientific American. New York. Vol. 93.**

— The danger of lightning in armored concrete constructions. P. 123.

**Symons's Meteorological Magazine. London. Vol. 40.**

**Sutton, J. R.** A low freezing point. Pp. 100.

**Backhouse, T. W.** Partial drought. P. 100.

**Pearson, Edward.** Partial drought. P. 101.

**Newman, T. P.** Heavy rain in June at Haslemere. Pp. 101-102.

**Lawson, G. C.** Rainfall of July 9th. [1905.] P. 102.

**Crossman, Alex.** Rainfall of July 9th. [1905.] P. 102.

**McEwan, John.** Rainfall of July 9th. [1905.] P. 103.

**Freir, Harold E.** Rainfall of July 9th. [1905.] Pp. 103-104.

**Clough, T. E.** A small whirlwind. Pp. 104-105.

**Annuaire de la Société Météorologique de France. Paris. 53 année.**

**Launay, F. and Maillet, E.** Sur le débit probable des sources pendant la saison chaude de 1805 (1<sup>er</sup> mai-1<sup>er</sup> novembre). Pp. 145-147.

**Eiffel, G.** Analyse de l'ouvrage "Etudes pratiques de météorologie et observations comparées des stations de Beaulieu, Sèvres et Vacquey pour l'année 1903". Pp. 148-155.

**Angot, A.** Les tirs contre la grêle en Italie. Pp. 155-168.

**Chassant, Maurice.** La plus haute température observée en France. Pp. 158-160.

**David, P. and Dufour, Ch.** L'orage du 10 juin observé au Bureau Central Météorologique. Pp. 165-166.

**Angot, A.** Variation diurne de la température entre les tropiques. Pp. 166-168.

**Archives des Sciences Physiques et Naturelles. Genève. 4 Période. Tome 20.**

— Observations météorologiques faites aux fortifications de Saint-Maurice pendant les mois de décembre 1904, janvier et février 1905 (hiver 1905). Pp. 75-81.

**Ciel et Terre. Bruxelles. 26 année.**

**Arctowski, Henryk.** Rayons crépusculaires observés après le coucher du soleil. Pp. 217-218.

**Comptes Rendus de l'Académie des Sciences. Paris. Tome 141.**

— Vérification des altitudes barométriques par la visée directe des ballons-sondes. Pp. 153-155.

**Berget, A.** Sur la chute de grêle du 16 juillet 1905 à Maisons-Laffitte. P. 232.

**Garrigou-Lagrange, Paul.** Les mouvements généraux de l'atmosphère en hiver. Pp. 283-285.

**La Nature. Paris. 33 année.**

**Quénisset, F.** La photographie météorologique. Photographie des nuages. Pp. 107-108.

**Grye, Bouquet de la.** La météorologie en France. Pp. 114-115.

**Rudaux, Lucien.** La foudre en boule. Pp. 127-128.

**Le Temps qu'il Fait. Mons. 2 année.**

**Akos, Széki.** Indicateur automatique de gelée. Pp. 121-122.

**R., F. de.** Les pluies rouges en mer. Pp. 124-126.

**Annalen der Hydrographie und Maritimen Meteorologie. Berlin. 33 Jahrgang.**

— Die Eisverhältnisse an den deutschen Küsten im Winter 1904-05. Pp. 308-314.

**Burchard, Oscar.** Meteorologische Station La Paz Botánica bei Puerto de Oratava (Teneriffe). Pp. 320-321.

— Zyklon bei Mauritius am 20. bis 23. Januar 1905. P. 321.

**Geographische Zeitschrift. Leipzig. 11 Jahrgang.**

— Ueber den Schneefall im gemäßigten Nord-amerika. [Review] Pp. 410-411.

**Illustrierte Aeronautische Mitteilungen. Strassburg. 9 Jahrgang.**

**Q[uervain, A. de].** Eine merkwürdige Störung in der Erscheinung des Bishopschen Rings. [Note on article by J. Maurer.] P. 227.

**Nimföhr, R.** Beiträge zur Theorie der Drachen in ihrer Anwendung für meteorologische Hochaufstiege. Pp. 244-254.

**Meteorologische Zeitschrift. Wien. Band 22.**

**Nimföhr, R.** Sehr tiefe Temperaturen in grossen Höhen der Atmosphäre. Pp. 289-299.

**Börnstein, R.** Der tägliche Gang des Luftdruckes in Berlin. Pp. 299-305.

— Ausserordentliche Regenmengen im Mai 1905 in Südtirol. P. 306.

**Hann, J.** Ueber die Regenverteilung in Niederösterreich. Pp. 306-310.

— R. Nimföhr über eine neue Methode zur Fixierung der Aufzeichnungen von Meteorographen für Registrierballons und eine neue automatische Abstellvorrichtung der Schreibfedern nach der Landung. Pp. 310-311.

**Fényi, Julius.** Ueber Temperaturerniedrigung infolge erhöhter Insolation. Pp. 310-311.

— Ausserordentlicher Regenfall im Februar 1904 in Honolulu. P. 313.

**Bodman, Gösta.** Meteorologische Ergebnisse der schwedischen Südpolarexpedition. Pp. 313-319.

**Hann, J.** Die Ergebnisse der meteorologischen Beobachtungen